

Please amend the application filed on even date herewith prior to proceeding with this examination.

IN THE CLAIMS

Please cancel claims 1-61, inclusive, without prejudice or disclaimer.

Please add new claims 62-105, inclusive, as follows:

62. A method for preserving the original appearance of cementitious, stone, or marble product from the action of atmospheric agents, characterized in that the surfaces of said products are treated with colorless colloidal preparations of titanium dioxide or one of its precursors.

63. A method according to Claim 62, wherein in which the preparations of titanium dioxide or one of its precursors contain a metal ion chosen from the groups I-VA, and the lanthanide or actinide series of the periodic table, and mixtures thereof.

64. A method according to Claim 63, wherein the preparations of titanium dioxide or one of its precursors contain a metal ion selected from the group consisting of lithium, beryllium, magnesium, scandium, yttrium, lanthanum, cerium, niobium, vanadium, zirconium, and mixtures thereof.

65. A method according to Claim 64, wherein the preparations of titanium dioxide or one of its precursors contain ions selected from the group consisting of magnesium, cerium, niobium, and lanthanum.

66. A method according to Claim 63, wherein the preparations of titanium dioxide or one of its precursors contain the metal ion in an amount of from 0.1 to 5% (percentage expressed as metal-ion atoms with respect to the titanium atoms).

67. A method according to Claim 66, wherein the preparations of titanium dioxide or one of its precursors contain the metal ion in an amount of from 0.1 to 1%.

68. A method according to Claim 62, wherein the titanium dioxide is prevalently in the form of anatase.

69. A method according to Claim 68, wherein at least 75% of titanium dioxide is in the form of anatase.

70. A method according to Claim 62, wherein the titanium-dioxide precursor is a product able to produce titanium dioxide prevalently in the form of anatase.

71. A method according to Claim 70, wherein the titanium-dioxide precursor is a product able to produce titanium dioxide prevalently in the form of anatase with appropriate types of thermal treatment.

72. A method according to Claim 70, wherein the titanium-dioxide precursor is chosen from the group comprising TiCl_4 , TiOSO_4 , and titanium alkoxide.

73. A method according to Claim 62, for the oxidation of polluting substances chosen from the group comprising organic substances present in the environment as a result of motor-vehicle exhaust or industrial emissions, and inorganic compounds.

74. A method according to Claim 74, for the oxidation of nitrogen oxides (NO_x).

75. A method according to Claim 62, wherein the titanium dioxide in colloidal form is prepared using sol-gel techniques so as to obtain particles having a size of between 10 and 200 Å.

76. A method according to Claim 75, wherein the particles of titanium dioxide have a size of between 50 and 100 Å.

77. A method according to Claim 62, wherein an aqueous suspension of the colloidal preparation of titanium dioxide or one of its precursors is applied on the product in small successive amounts until the desired thickness is reached.

78. A method according to Claim 77, wherein the colloidal preparation is vacuum-dried so as to obtain a powder which can be re-suspended in water, maintaining its colloidal properties.

79. A cementitious, stone, or marble product, characterized in that it is coated with a colloidal preparation of titanium dioxide or one of its precursors.

80. A cementitious, stone, or marble product according to Claim 79, wherein a preparation of titanium dioxide or one of its precursors contains a metal ion chosen from groups I-VA, and the lanthanide or actinide series of the periodic table, and mixtures thereof.

81. A cementitious, stone, or marble product according to Claim 80, wherein a preparation of titanium dioxide or one of its precursors contains a metal ion selected from the group consisting of lithium, beryllium, magnesium, scandium, yttrium, lanthanum, cerium, niobium, vanadium, zirconium, and mixtures thereof.

82. A cementitious, stone, or marble product according to Claim 81, wherein a preparation of titanium dioxide or one of its precursors contains ions selected from the group consisting of magnesium, cerium, niobium, and lanthanum.

83. A cementitious, stone, or marble product according to Claim 80, wherein a preparation of titanium dioxide or one of its precursors contains the metal ion in an amount of from 0.1 to 5% (percentage expressed as metal-ion atoms with respect to the titanium atoms).

84. A cementitious, stone, or marble product according to Claim 83, wherein a preparation of titanium dioxide or one of its precursors contains the metal ion in an amount of from 0.1 to 1%.

July 2 85. A cementitious, stone, or marble product according to Claim 62, wherein the titanium dioxide is prevalently in the form of anatase.

86. A cementitious, stone, or marble product according to Claim 68, wherein at least 75% of titanium dioxide is in the form of anatase.

B2 87. A cementitious, stone, or marble product according to Claim 62, wherein the titanium-dioxide precursor is a product able to produce titanium dioxide prevalently in the form of anatase.

88. A cementitious, stone, or marble product according to Claim 87, wherein the titanium-dioxide precursor is a product able to produce titanium dioxide prevalently in the form of anatase with appropriate types of thermal treatment.

Aug 13 89. A cementitious, stone, or marble product according to Claim 70, wherein the titanium-dioxide precursor is chosen from the group comprising TiCl_4 , TiOSO_4 , and titanium alkoxide.

90. A cementitious, stone, or marble product according to Claim 62, wherein a preparation of titanium dioxide or one of its precursors has the function of oxidant for polluting substances chosen from the group comprising organic substances present in the environment as a result of motor-vehicle exhaust or industrial emissions, and inorganic compounds.

91. A cementitious, stone, or marble product according to Claim 90, wherein a preparation of titanium dioxide or one of its precursors has the function of oxidant for nitrogen oxides (NO_x).

92. A cementitious, stone, or marble product according to Claim 62, wherein the titanium dioxide in colloidal form is prepared using sol-gel techniques so as to obtain particles having a size of between 10 and 200 Å.

93. A cementitious, stone, or marble product according to Claim 75, wherein the particles of titanium dioxide have a size of between 50 and 100 Å.

94. A cementitious, stone, or marble product according to Claim 62, wherein an aqueous suspension of the colloidal preparation of titanium dioxide or one of its precursors is applied on the product in small successive amounts until the desired thickness is reached.

95. A cementitious, stone or marble product according to Claim 62, wherein the colloidal suspension of titanium dioxide or one of its precursors is vacuum-dried so as to obtain a powder which can be re-suspended in water, maintaining its colloidal properties.

96. A process for the creation of colorless colloidal preparations of titanium dioxide or of one to its precursors containing a metal ion chosen from groups I-VA, and the lanthanide or actinide series of the periodic table, and mixtures thereof, characterized in that the hydrolysis of the titanium dioxide precursors takes place directly in the presence of the salt of the metal ion

by co-precipitation or mixing and characterized in that the metal ion is present in an amount of from 0.1 to 5% (percentage expressed as metal-ion atoms with respect to the titanium atoms).

97. A process according to Claim 96, wherein the metal ion is chosen from groups I-VA, and the lanthanide or actinide series of the periodic table, and mixtures thereof.

98. A process according to Claim 97, wherein the metal ion is selected from the group consisting of lithium, beryllium, magnesium, scandium, yttrium, lanthanum, cerium, niobium, vanadium, zirconium, and mixtures thereof.

99. A process according to Claim 98, wherein the ions are selected from the group consisting of magnesium, cerium, niobium, and lanthanum.

100. A process according to Claim 96, wherein the metal ion is present in an amount of from 0.1 to 1%.

101. A process according to Claim 96, wherein the titanium dioxide is prevalently in the form of anatase.

B2 102. A process according to Claim 101, wherein at least 75% of titanium dioxide is in the form of anatase.

103. A process according to Claim 96, wherein the titanium-dioxide precursor is a product able to produce titanium dioxide prevalently in the form of anatase.

104. A process according to Claim 103, wherein the titanium-dioxide precursor is a product able to produce titanium dioxide prevalently in the form of anatase with appropriate types of thermal treatment.

105. A process according to Claim 86, wherein the titanium-dioxide precursor is chosen from the group comprising TiCl_4 , TiOSO_4 , and titanium alkoxide.